

Title (en)
Piston pump

Title (de)
Kolbenpumpensystem

Title (fr)
Pompe à piston

Publication
EP 1426662 A1 20040609 (DE)

Application
EP 02027243 A 20021206

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EP 02027243 A 20021206

Abstract (en)
A piston pump system consists of a piston (1) in a guide tube (2), which moves longitudinally and connects onto a pump chamber (5). A piston pump system consists of a piston (1) in a guide tube (2), which moves longitudinally and connects onto a pump chamber (5). The latter is connected to a storage vessel via a connection with a valve, and the pump chamber is connected to a fluid extraction system. The tube contains a groove (4) that holds an O-ring seal (3), which seals the piston. The seal has a gas permeation coefficient of 100-500 Ncm³mm/(m²hbar) for nitrogen, and a radial compression of less than 30%. The seal fills the groove by more than 90%.

Abstract (de)
Die vorliegende Erfindung betrifft ein Kolbenpumpensystem zum im Wesentlichen gasfreien Abmessen und/oder Umpumpen vorbestimmter Mengen an Flüssigkeiten, bevorzugt pharmazeutischen Flüssigkeiten mit oxidationsempfindlichen Bestandteilen. Bevorzugt wird das System als Mikropumpe oder Bestandteil einer solchen in Medizingeräten wie beispielsweise transdermalen therapeutischen Systemen eingesetzt. <IMAGE>

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IPC 8 full level
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Citation (search report)
• [Y] US 4246833 A 19810127 - BURKLUND VERNON D
• [Y] EP 0361260 A2 19900404 - OPHARDT HERMANN PRODUCT [DE]
• [Y] DE 19921951 A1 19991118 - UNIV DRESDEN TECH [DE]
• [Y] US 6389955 B1 20020521 - SCHAEFER ERNST-DIETER [DE]
• [Y] US 6132755 A 20001017 - EICHER JOACHIM [DE], et al

Cited by
DE102005052898A1; AU2006310780B2; EA013492B1; KR101298061B1; NO339610B1; US9539385B2; US10850032B2; WO2013150025A1; WO2007051536A1

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